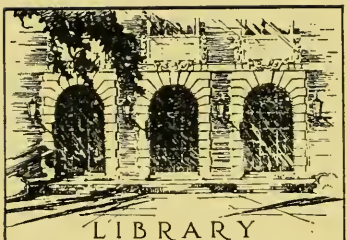

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INSTITUTE OF LABOR AND INDUSTRIAL RELATIONS

BULLETIN

What Tests Can Do For Industry

UNIVERSITY OF ILLINOIS BULLETIN

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EDITORIAL NOTE

In accord with the purposes of the University as a State-supported educational institution, the Institute of Labor and Industrial Relations aims at general education as well as at the special training indicated in its title. It seeks to serve all the people of the State by promoting general understanding of our social and economic problems, as well as by providing specific services to groups directly concerned with labor and industrial relations.

This *Bulletin* series is designed to present periodically information and ideas on topics of current interest in labor and industrial relations. The presentation is non-technical and is designed for general, popular use. No effort is made to treat the topics exhaustively.

Additional copies of this *Bulletin* are available. A charge of five cents a copy will be made, except that the first 10 copies will be furnished free of charge to individuals and groups in Illinois. Also available are copies of these other Institute *Bulletins.*

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The Conciliation Process
Municipal Mediation Plans
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WHAT TESTS CAN DO FOR INDUSTRY

By Thelma B. Fox

"Picking good workers is no problem for me — I can tell as soon as I see them whether or not they'll fit into my organization."

"Tests may be all right, but they're too expensive for me to use."

"We start everyone at the bottom anyway so why should we bother to test them? If they don't work out, we can always get rid of them."

"There aren't any tests that fit our jobs."

"Testing takes too much time — we can't afford to spend so much time on every applicant."

"There's no use in testing applicants for jobs. When there are a lot of workers available, we just take those with experience and when there is a shortage, we just take everybody."

Comments such as these may be heard almost every day from some management group.

The worker, too, has definite reactions to the idea of taking tests to get a job, to be accepted for a training program, or to get a promotion.

"I'm not in school. I want a job. Why should I take a test?"

"Tests are unfair."

"I know the stuff all right, but I just never did do well on a written test."

"Testing is just another management way of discriminating against the union."

Comments like these are not infrequently heard from workers.

Despite such resistance to testing, many companies *do* make some use of tests. No accurate figures are available, however, as to the exact number of firms in this group. In general, tests have been used more widely in clerical and sales jobs than in industrial jobs. Industrial use of tests is, however, on the increase. Interest in the use of tests has grown steadily since the early 1930's. Testing is still so new that many people from top management to the least skilled worker do not understand its uses. This *Bulletin* is an attempt to describe how tests can be used in industry and may clear up some of the misconceptions about them.

The most common use of tests in industry has been the selection of employees from the people applying for jobs. This is certainly one of the most important uses of tests but it is by no means the only one. Before discussing the various uses of tests, let us take a look at the typical personnel department, since testing is usually found in the personnel department as one of the services to production men.

THE TESTING SECTION IN THE PERSONNEL DEPARTMENT

The personnel department in any industrial or business organization is a service agency to the people in charge of the actual operation of the plant or business. Its only excuse for existence is that it may help to solve operating problems or may prevent them from arising.

In most large organizations, the personnel department is made up of several sections such as Placement, Training, Testing, Employee Relations, and Wage Classification. Smaller organizations will not, of course, have separate sections for each of the personnel functions, but will probably combine several or all of them as best fits their particular needs and facilities. Recruitment, selection, placement, reassignment, and promotion of employees are the jobs of the *placement section.* The provision of knowledges, skills, habits, and attitudes is the job of the *training section.* The *employee relations section* handles employee orientation, personal problems, separation counseling, and employee morale. The jobs of the *wage classification section* are job analysis and the setting of job and salary scales. This pattern may vary from organization to organization but, in general, this breakdown prevails.

Each of the sections mentioned here performs certain definite tasks which set it apart as a unit. The sections can, and sometimes do, act as separate units without regard to the other personnel services. This is generally considered bad personnel practice. The resulting poor handling of problems may end in a decision by management that the personnel program isn't worth what it costs. The personnel department works best when operating problems are brought to the department as a whole and a program of action

decided on by all sections. Any single problem may require the services of one or more of the personnel sections. If problems are handled this way, each personnel section is aware of the activities of the other sections and the operating division gets the best possible handling of its problems.

The job of the testing section is tied in closely with each of the other personnel sections. By itself, testing provides no answers for operating problems. The testing section, it is true, could test for aptitudes, abilities, performance and achievement. But for what purpose? Testing is meaningful only if it serves as one of the methods or tools used by the other personnel sections in order to find clues to the reason for the difficulties and the possible solutions to such difficulties. To illustrate this point, let us look at the relationship of testing with each of the other sections.

Testing Works for the Placement Section

It has already been indicated that the most common use of tests is in the selection and placement of people who apply for employment. In attempting to hire people for any job, the placement technician needs to know what the job duties are and what abilities in what amounts are required to fill the job successfully. The description of the duties will be fairly easily obtained with the help of the supervisor and the classification analyst. What abilities are required and in what amounts is not so easily determined. Without these facts, however, there is danger of placing a person in a job which is below his level of ability, above his level of ability, which requires abilities which he does not possess, or which does not use special abilities which he possesses and which may be of great value to the company. All of these situations are misplacements which sow the seeds for employee problems and related operating problems in the future.

If Mary Smith is working *above* her level of ability or in a job which requires abilities she does not possess, she will probably not succeed at the job. Her failure may be detected quite quickly. Alice Jones, working *below* her level of ability or in a job which does not use some of her special abilities, will probably succeed at the job. But, also, she will probably become bored, frustrated, and tired of her job. Then we find Miss Jones who, at one time, was an excellent

worker, becoming careless, sloppy and inefficient. An employee in Miss Jones shoes may decide to look elsewhere for a job and the company has lost a potentially desirable employee.

Ability Isn't Everything

Placing applicants in the right job is made difficult by the fact that success on the job is not due solely to the ability to do the job. Various estimates have been made as to how much ability contributes, how much interest, perseverance, personality, and attitudes contribute, and how much chance factors enter into the attainment of success on a particular job. While the estimates vary, it is generally agreed that all of the factors are important. That is to say, ability alone will not insure success on the job.

While some work has been done in testing personality, interest, and attitudes, the use of these tests in business and industry is a fairly new development still in the experimental stage. The ability factor is the one to which the testing technicians have given the most attention. It is also the one which can be predicted with some accuracy.

Thus, it is possible for a person with a great deal of ability to fail at a job because he has no interest in the job, no desire to succeed, and is unable to get along with his fellow workers. Looking at the other side of the picture, it is possible for a person who has excellent work habits, is conscientious and willing, and gets along well with his fellow workers to make up in part for his lack of ability. There are, of course, limits to which this compensation can be carried. Good work habits alone will not make a person successful on a job that requires skills and abilities which he does not have.

It is very difficult to put the right people into the right jobs unless adequate job standards are established. These usually are stated in terms of the amount of education required, age, sex, physical condition, and general background and experience. You can remember applying for a job and being asked to fill in application blanks, to give references, and to be interviewed by an employment interviewer. This procedure is essential, but experience has shown that it is not enough. Unless the work experience of the

person has been in a job exactly like the one for which he is applying, the interviewer still doesn't know whether or not the applicant has the necessary skills and abilities.

Placement by Trial and Error

To place people on jobs on the basis of such information as background, experience and education *alone* usually involves a great deal of guess work. It may prove to be a method of trial and error which is costly to both employee and management.

It is important to have such basic information, but these factors *alone* often are not sufficient. A particular degree of intelligence, or an aptitude for clerical work, or a flair for figures, or a mechanical turn of mind may also be required. Thus, the first job that must be done is to establish minimum and perhaps maximum amounts of the various factors such as aptitudes, abilities, education, and experience that are needed for each job. One of the techniques that may be used in determining these standards is to test those who are successfully performing that job now.

Once these standards are established, they may be used by the placement technicians as a basis for recruitment, selection, reassignment, or promotion. They now know what they need and what they should be looking for. The jobs have been analyzed and their requirements defined. The next step is to determine which of the persons applying for jobs best meet those needs and requirements. The tests which have been used to determine the standards may also be used to help the interviewer determine whether the applicant meets those standards.

Background and educational experience are factors to be considered, but they are not considered in isolation. They are considered along with ability and aptitude for the job in question. The use of tests gives the placement technician a method for relatively objective measurement of these factors. The placement office then has the benefit of all of the available information concerning an applicant instead of just part of it. The applicant has the benefit of a full hearing, a fair evaluation of his abilities, and the chance of being placed in a job that he can do successfully.

Does this mean that tests should be used for all jobs?

Not at all. There may be some jobs for which background and experience are sufficient evidence. There may be some jobs for which no adequate tests are available.

Does it mean that, whenever tests are used, the right person will always be selected for the job? That there will be no mistakes?

Again, the answer is, "No." There will be errors, of course. Some people who might have succeeded will be rejected. Also, some people will be accepted for jobs who fail to perform successfully. This happens with or without a testing program. Testing may, however, reduce the number of "misses." Merely measuring characteristics does not solve problems, but it does furnish the personnel interviewer with measured facts to be related to all other known facts so that he can make more accurate decisions.

Tests Give Percentage Predictions

Test predictions, like life insurance mortality tables, are percentage predictions. Results of personnel measurements do not say, "This man is sure to succeed." They say, "So far as this particular factor is concerned, this man is one of a group of whom 92 percent will succeed on this job. He has only 8 chances in 100 of being unsatisfactory." This prediction has the further advantage of being based on tests which give the same opportunity to all applicants. However, it must be remembered that the prediction applies *only* to the particular factor which is being tested and that other factors may make the applicant unsuccessful on the job.

As an illustration, let us assume that three clerical jobs are open at Company X. All of them are classified at the same wage rate. Three applicants for the jobs are well matched in education and personality and none of them has had very much work experience. While all three jobs pay the same wage, the actual job duties differ considerably. One job is largely filing, another is the computing of man-hour reports, and the third is the checking and recording of data. The skills needed in the three jobs are different. The placement interviewer is faced with the problem of deciding which of the applicants will best fit each job.

No industry keeps a purchasing agent for very long who selects a new and untried piece of equipment on the basis of a short in-

terview with one salesman. Yet this same industry expects the placement interviewer to select a new and untried employee on such a basis. Even the most expert personnel worker cannot look at an applicant and determine which of these clerical tasks he is best suited to do. There are no lines in his face which tell the interviewer that this person will or will not be successful at a given type of clerical work. In this case, the interviewer must determine which job the applicant can learn most readily and do most satisfactorily — filing, computing, or recording and checking? The clerk who can do a good filing job may be at a loss when it comes to computing man-hour reports. Such problems as these can be solved more readily through the use of a group of tests designed to get the information needed.

Tests Help in Reassignment

Another problem frequently met in most businesses and industries is caused by the decrease of operations in one section and the increase of operations in another. The business no longer needs all of the employees in Section A, but needs more in Sections B and C. The job is one of selection and reassignment. One costly solution in both money and employee morale would be to fire all of those people who are declared excess in Section A and then try to hire new employees to fill the jobs in B and C. Such a solution obviously is unfair to the employees. Another solution would be to reassign the excess workers from Section A to the available jobs in B and C. If this is done, two things must be considered. First, who are the excess workers in Section A? Second, which jobs are they to be reassigned to?

At this point supervisors' ratings, employee evaluations, work records, attendance, comparability of wage rates, and seniority will all be factors to be considered. In some instances, it will be possible to select the group to be retained without using "tests." The existence of a valid merit rating system may make a formal test unnecessary. (The development of such rating systems is another of the problems in which the techniques of the testing technician may be used to advantage. The test technician is aware of the requirements of the job and may therefore build the rating system around

the actual job requirements. He will also be able to apply the objective techniques used in testing to the problem of merit rating.)

It may also be possible to use production records as a means of determining the workers to be retained. This is particularly true where both quality and quantity records are kept for each employee.

It may be relatively easy through a test, through a review of the merit ratings, through production records, or all three, to select Mr. X as the person doing the best job in Section A. It may not be wise or fair, however, to retain him in the job. This is particularly true if there is no room for advancement in Section A and some of the new jobs in Sections B and C are higher level jobs which he is capable of performing. It is possible that another person, Mr. Y, in Section A is doing an efficient but less outstanding job. In this case, it would probably be better to retain Mr. Y in Section A and reassign the outstanding worker, Mr. X, to the more difficult job in another section.

Once the excess workers have been selected, they must be reassigned to those jobs in Sections B and C which come closest to matching their abilities. The supervisor and the placement and testing technicians will probably cooperate to determine who the "excess" workers are and what jobs they shall be assigned to. It is possible that the employee relations section will also have something to contribute in this instance.

Using Tests in Promotions

Most businesses and industries base promotion of employees on a combination of seniority rights and ability. Management has tended to feel that, in addition to the seniority factor, some consideration must be given to the ability of a person to carry out the duties of the higher level job. Unions, in general, have tended to insist upon straight seniority promotions, although most workers want assurance that their superior performance will gain some recognition. The difficult task has been how to measure and determine the superior performance and ability, particularly in mass-production assembly line operations.

Unions tend to resist the use of supervisory ratings in the belief that these are based too much on one man's opinion and may

be used as a weapon to discriminate against union members. There are some ways of placing supervisory ratings on a sounder and more objective base, but that is not the subject of this *Bulletin.* Even "good" supervisory ratings will not solve the promotion problem. The use of supervisory ratings alone may provide information on Mr. Y's performance at his present job, but leaves unsolved the question of his ability to handle a new job. He may be performing his present job very efficiently and yet be completely incapable of accepting the additional responsibilities and duties of a new job. Mr. X, with lower seniority rights, may have a higher potential and be a better bet for the promotion.

The establishment of minimum requirements for a new job and the development of a group of tests designed to test for the characteristics necessary for satisfactory performance on that job can go a long way to provide the answers for such problems. The tests are free from personal judgment. Each employee is given the same chance on the same test. Determination of ability to do a new job through the use of tests should be a guarantee to the union that management isn't playing favorites. The tests should also provide management with the assurance that the person selected has the ability necessary to perform the job. Promotion could then be made on the basis of seniority and ability, with ability being determined by the use of tests as well as by supervisors' judgments.

All of these problems in the Placement Section exist no matter what the state of the labor market. During the depression of the 1930's, many employers made it a practice to hire college graduates for all jobs. They did so because college graduates were available and were willing to take whatever jobs were offered. Evidently the theory behind this move was that the more education a man had the better job he could do, regardless of the nature of the job. This proved untrue. As indicated earlier, factors other than education entered into success on the job. When jobs are plentiful and employees are hard to get, there is a tendency to take almost all who apply and hope that they work out. This was particularly true during the war. However, even at times when no applicant may be rejected, it may make considerable difference to that person and to the company where he is placed. A sound decision must be made as to which of the several available jobs he is to be hired for.

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TESTING AS AN AID TO THE TRAINING SECTION

No matter what the state of the labor market may be, employee training is necessary. Special skills may be required; a new method of procedure may have to be installed; the accepted method of doing a job may have to be improved. All of these require training, either on-the-job or in training rooms. In carrying out a training program, problems arise which testing can help solve.

What Kind of Training Needs to Be Done?

Let us assume that the method for the job in question is established. Most of the employees have been performing this job for several months. Production figures show that the division is not producing as much as it should and that a bottleneck has developed. The supervisor is having trouble discovering the cause for the unsatisfactory work. The training section is called in and asked to develop a training program designed to teach the employees what they need to know to do a better job and to break the bottleneck. The Training Section, by itself, can do one of two things. First, it may survey the job and set up a training program which covers all of the elements. This is known as "shotgun" or "blanket" training. If the job is a relatively simple one, the method might be satisfactory. More often, however, it is a waste of time and effort for the Training Section and for the employees. Moreover, since the employees are probably already familiar with some of the job elements, they will probably resent being asked to "learn" something they already know.

The second method the training section can use is to consult with the supervisor and try to select those phases which seem to be causing trouble. This method is uncertain and may leave out areas in which training is needed, but which are not recognized by the supervisor.

At this point, the testing section may well be consulted. A test or several tests could be developed to determine what the employees already know about the job that is giving the trouble. All employees in the section can be tested and the results analyzed to see where training is needed.

Such a test is usually known as a "pre-test" and should be developed with the assistance of the supervisor or someone who is thoroughly familiar with the job in question. Giving this test to the employees scheduled for training would provide two kinds of information: First, a general view of what phases of the job are not known to the group and where the emphasis should be placed in the training course; and second, an analysis of the problems of individual workers, enabling the trainer to give personal assistance on those problems. It may be that only a small number of employees need any training. It may be that all of the employees need training in a few phases of the job and that some of them need additional training which can be given individually. Whatever the results, the Training Section is now in a position to "tailor" its program to the needs of the employees in that section. Such a test may also provide the basis for measuring the effectiveness of the training program at a later date.

Which of the Employees Are Trainable?

This question occurs every time a new training program is planned. If we have an ideal situation in which every employee has been carefully tested before being hired and placed, then, potentially, each employee will be trainable in the skills for his particular job. But this ideal situation rarely exists. Mr. J. may be working in a section and doing well enough to "get by." However, he may lack the ability to profit by any further training. Such an employee should and could be located and transferred to a job nearer to his capacities. There is no point in training him in a job for which he has no aptitude.

The problem of finding "trainable" people is particularly acute in the selection of employees for special training programs such as apprenticeship training, pre-foreman training, or training on new machines or for new jobs. Before the Training Section attempts to plan a program, it must know what the elements of the job are. It should also know that the employees being given the training have a fair chance of completing the training course successfully. In one large manufacturing concern the use of a carefully selected group of tests made it possible to reduce sharply the failures among

apprentices. When apprentices were selected solely on the basis of work history, expressed interests, and interviews by foremen and personnel men, about 55 percent of those selected were able to complete the apprenticeship training satisfactorily. Forty-five percent of the group failed the training course. When a group of tests were added to the selection process, the number of failures was reduced to less than 9 percent. Tests were *added* to the selection procedure, not substituted for all of the other factors.

How Effective Were the Training Programs?

One of the most difficult problems faced by the training section is measuring the effectiveness of training programs. Did this program solve the problem? Was it worth the time, energy, and money that was expended? Should similar programs be used in other situations or should the program be changed in some way? These are crucial questions for the Training Section, both in "selling" themselves to top management and in critically reviewing their own efforts. In almost all training situations, evaluation must be based on partial evidence such as lower turnover figures, shorter training time, more productive workers, fewer grievances, and other such measures. Tests may be an added tool for evaluation. Not every situation can be treated by the use of tests. But some can be. This is particularly true where a special skill or specific information is being taught. If the people receiving the training are capable of learning what is being taught, a test administered both before and after the training program should give the training section a measure of how much has been learned. It is true that the trainers still do not have any measure of how much of what has been learned has been applied. This can be obtained only by a follow-up study of the employees on the job.

TESTING TO ISOLATE EMPLOYEE RELATIONS PROBLEMS

The Employee Relations Section is continually besieged by individuals with personal problems, job grievances, and low morale. George Horton may complain to the employee relations counselor or to his supervisor that he hasn't been given a fair chance to

advance, that he really has the ability to do a mechanic's job. The counselor is in a difficult position. Horton may actually have the abilities and may, therefore, have a legitimate grievance. On the other hand, he may just be "griping." In order to know just how to handle the situation, the counselor should have the answer to the question: Is this man capable of carrying out the job to which he wants to be transferred? This can be done best by referring Horton to the Testing Section so that his abilities may be determined. If he has the mechanical aptitude required, he may be referred to the Placement office for possible reassignment. If he does not, other aptitudes may be uncovered and recommendation made on that basis, or the problem may then be safely treated as a personal one by the counselor.

If the Employee Relations Section becomes aware of a widespread problem of employee morale and finds it difficult to fix the causes, testing may be able to perform a service by preparing a questionnaire designed to obtain as many of the facts as possible.

WHAT ARE TESTS?

Tests are not completely new in industry. Employers have always "tried out" applicants for jobs in one way or another. In the days when plants were small, it was a relatively easy procedure to put a man to work on the job for which he was applying and to watch him to see how well he performed. This was "testing" the applicant.

It is no longer practical in modern industry to try out every applicant on the assembly line before hiring. These "try-outs" were different for each employee and the applicant's performance was judged by the foreman who might not feel very well that day and so decide that the applicant didn't do very well. Or he might be prejudiced against people with red hair and so decide never to hire any red-haired applicant.

The modernized version of tests is simply a *standard* method of measuring the ability of an applicant to do a certain kind of work. All applicants are asked exactly the same questions or given exactly the same tasks to perform and all of the answers or performances are compared with the same standards.

The two types of tests which are in most common use are:

1. Aptitude Tests: These tests measure the potential ability of a person to do a type of work that is new to him. They are used to predict the success that an individual may have on the job after he has been given the necessary training. Some aptitude tests measure a general aptitude such as clerical ability or mechanical ability. Others measure specific aptitudes or aptitude for specific jobs such as lathe operator or file clerk.

2. Achievement Tests: These tests measure the amount of knowledge that the applicant has about a job for which he is applying or the amount of skill he has in performing that job. His performance is usually compared with that of employees who are presently working at that job successfully.

There are other types of tests which are less widely used in business and industry. Among these are:

1. **Personality Measures:** These may be tests or questionnaires and are designed to measure the various traits of the individual, such as honesty, stability, shyness, which are considered to be part of the total personality.
2. **Interest Inventories:** These are usually a series of questions designed to determine the general areas in which the individual has the greatest interest. This information is considered important since it is generally recognized that an individual's interests will, to a large extent, determine his activities. We know with some certainty that we cannot expect someone to succeed in a job in which he has no interest — no matter what his abilities may be. On the other hand, of course, no amount of interest will compensate for lack of ability to do the job.

Tests may also be classified as written tests or performance tests. Some tests may be given to large groups and some to each applicant individually. The kind of tests used will depend upon the purpose.

Personality and interest measures are used less widely than aptitude and achievement tests because they are still in the experimental stage, particularly as far as their use in business and industry is concerned.

In general, there are two points of view regarding the use of tests in personnel procedures. The first of these is that test results are of no use in industrial situations and that all testing is a waste of time and energy since it is so "academic." The second is that tests will give the final and best answer to any and all of the problems of personnel. Neither of these two views can be defended. As has been shown, test results can be of special use. They are not the only tool which should be used.

There is also the feeling among some unions that testing is a management tool and is, therefore, to be distrusted and fought. This same charge may be made about such things as job evaluation, employee training, and other so-called management tools. People quite naturally distrust those things which they do not understand or have seen misused. The solution is not to eliminate the tool, but to eliminate the misunderstanding and misuse. There is no way in which the *legitimate* use of test results can work to the disadvantage of a union; and there are many ways in which it may *help* to solve problems, such as promotion policies.

Much of the antagonism towards a testing program is a hangover from the feeling — often developed in school years — that tests and examinations are to be feared and avoided and are used to "get even" with students unfortunate enough to incur the displeasure of the teacher. From this, and from the fact that many school tests were developed by untrained people, arose the legend that all tests were unfair. This feeling may be carried over not only by the employee but also by many operating officials and technicians in other phases of personnel work. Technicians may also fear that their position in a personnel office is being jeopardized.

Some resistance to the use of test techniques in personnel procedures arises from the feeling that we do not want any "newfangled" ideas in our program. This sort of resistance may arise from management or from personnel technicians themselves.

Those who oppose the use of testing programs may argue: "After all, with all of your fancy testing you can't guarantee that the people you pick will be successful on the job. Why I know of one case — ." Off they go, telling you all about the fellow who failed all of his tests but was hired anyway, and, like Horatio

Alger, grew up to be president of the company. And they may be right, but they are making a judgment based on one case.

There is sometimes a natural tendency to judge all testing by a single instance or perhaps a single test which was thought to be silly or unfair, or both. There are many poor tests on the market and there are also many good ones. Some tests which are good for one situation are completely useless in another. Thus, when Company B tries to set up a testing program just like one used by Company A, it is disappointed when it does not get the same successful results. A test program must be "tailored" to the needs of the organization for which it is intended. There is no short cut to an effective testing program.

One of the main jobs of the Testing Section is to select those tests which will yield useful, pertinent and accurate information for the job at hand. Another is to establish the "norms" or standards by which the performance of the applicant or employee will be judged. In selecting the tests to be used, the test technician is concerned with two main considerations. First, is the test reliable? That is, will the test give approximately the same results if the same employee is tested again. Second, is the test valid? That is, does the test give information which pertains to the purpose for which it is being used?

The test may not look as if it has any relation to the job at all. This does not mean, however, that the test is not useful for the prediction of success on that job. For example, let us look at these sample items from a test. "What is the meaning of the following words: TOX, SEST, GRES, BIZ?" It may look silly, but such a test of phonetics has been found to be one of the best predictors of aptitude for stenographic work that has been developed. (For your information, the answers to the above phonetic spellings are: TALKS, CEASED, GREASE, BUYS.) No matter how inappropriate or silly a test looks, if it meets the need, then it is an appropriate test.

The man who objects to the use of tests can always remember very clearly the few instances in which the prediction made by the tests was in error. His memory is not nearly as good in regard to the number of times that the prediction made from test scores, *plus* other information, was accurate. In dealing with human beings, it

is, of course, impossible to obtain perfect results. We can, however, use tests as a means of cutting down the percent of error.

There is need for a great deal of research to determine the minimum requirements and job skills for the many operations in various industries. While this is a project that may be too large for any one plant to undertake, it is possible that several plants in a single industry might cooperate to hire the necessary personnel to establish those requirements and skills.

The initial cost of installing a testing program may be high, but it will probably pay for itself in lowered personnel costs over a period of time if it is properly planned and administered. A good testing program will require the services of a competent and technically-trained psychologist or test technician. These services may be supplied on a consulting basis for small plants or on a permanent basis for larger ones. Unless an organization is willing to hire a competent technician and give him the necessary cooperation and facilities, it would be better not to install a testing program at all.

NINE WAYS TESTS CAN HELP

The proper use of tests and other measuring techniques used to determine the abilities and aptitudes of personnel can make definite contributions to the total personnel and operating program of an industry or business by:

1. Eliminating those persons in the selection process who would become the worst misfits.
2. Eliminating, in a majority of the cases, lack of ability as the cause of unsatisfactory performance.
3. Locating individuals who have needed and unused abilities.
4. Locating individuals who have the capacity for more difficult work.
5. Locating individuals who are in need of training.
6. Helping to make merit-rating more objective and scientific.
7. Helping to discover the causes of low employee morale.
8. Determining training needs.
9. Evaluating training programs.

SEVEN GUIDES FOR USING TESTS

These results can only be obtained if the test program is:

1. Used in connection with other personnel techniques.
2. Based on tests selected by a properly trained technician.
3. Based on tests selected after a careful job analysis has been made.
4. Used on a continuing basis.
5. Evaluated periodically.
6. Properly explained to the employees and the union before it is put into effect.
7. Properly administered and carried out.